



TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
0030

Application Of: Kehrner et al.

Serial No.
09/933,408

Filing Date
August 20, 2001

Examiner
Halpern, Mark

Group Art Unit
1731

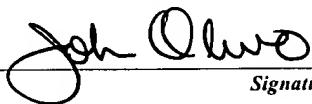
Invention: FIBROUS SHEET BINDERS

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on October 14, 2003

The fee for filing this Appeal Brief is: \$330.00

- ☒ A check in the amount of the fee is enclosed.
- ☐ The Director has already been authorized to charge fees in this application to a Deposit Account.
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Signature

Dated: December 15, 2003

John M. Olivo
Reg. No. 51,004

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12-16-03 Image # AF 1731

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Kehrler et al.

For: FIBROUS SHEET BINDERS

CERTIFICATE OF EXPRESS MAIL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Enclosed for filing in the above case are the following documents:

Transmittal of Appeal Brief
Appeal Brief (in triplicate)
Check (\$330.00)
Return Post Card

Respectfully submitted,

John M. Olivo
Reg. No. 51,004

Date: December 15, 2003

ARMSTRONG WORLD INDUSTRIES, INC.
2500 Columbia Avenue
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I hereby certify that all correspondences listed above are being deposited for delivery to the above addressee, with the United States Postal Service "**EXPRESS MAIL POST OFFICE TO ADDRESSEE**" service under 37 CFR 1.10 on the date indicated below:

The envelope has been given U.S. Postal Service "Express Mail Post Office To Addressee" Package # **EL047113787US**.

December 15, 2003

Date

April D. Fiedler
(Printed Name of Person Mailing
Correspondence)

(Signature of Person Mailing Correspondence)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:

Kehrer et al.

Serial No.: 09/933,408

Filed: August 20, 2001

For: FIBROUS SHEET BINDERS

Examiner: Halpern, Mark

Art Unit: 1731

Confirmation No.: 5728

Docket No.: 0030

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

This brief is submitted in triplicate pursuant to 37 CFR 1.192 in support of the Notice of Appeal filed in the above-identified application.

REAL PARTY IN INTEREST

The real party in interest in this application is Armstrong World Industries, Inc., the assignee of the present application.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants, or Appellants' legal representatives, which will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending Appeal.

STATUS OF CLAIMS

Claims 1-17 and 44-46 are pending in the application. Claims 1-17, 45 and 46 are rejected. Claim 44 is objected to as being dependent upon a rejected claim, i.e. claim 1, but would be allowable if rewritten in independent form including all of the base claim.

STATUS OF AMENDMENTS

There were no amendments filed subsequent to final rejection in this application.

SUMMARY OF INVENTION

The invention is a polymer binder for a fibrous sheet comprising a polyanion having a negative charge of between about 4 to about 12 milliequivalents per gram (page 3, lines 6-8) and a polycation having a positive charge of between about 6 to about 12 milliequivalents per gram (page 3, lines 8-9).

ISSUE

Is claim 1 properly rejected under 35 U.S.C. § 103 (a) as being unpatentable over U.S. Patent No. 5,338,406 to Smith?

GROUPING OF CLAIMS

In connection with consideration of the rejection of claims 1-17, 45 and 46, the claims should be grouped together.

ARGUMENT

In the Final Official Action mailed from the U. S. Patent and Trademark Office (PTO) on July 15, 2003, the PTO maintained its rejection of claims 1-3, 8-16 and 46 under 35 U.S.C. § 103 (a) as being unpatentable over U.S. Patent No. 5,338,406 to Smith.

By way of background, Smith describes a polyelectrolyte complex which includes an anionic polymer and a cationic polymer. The charge density of the anionic polymer is less than 5 meq/gram and the charge density of the cationic polymer is 0.2 to 4 meq/gram.

On page 2 of the Final Official Action, the PTO asserts: “[i]t would have been obvious, to one skilled in the art at the time the invention was made, that the cationic polymer charge of present ‘about 6 . . . meq/gram’ be construed on 4 meq/gram of Smith.” As support for this assertion, the PTO cited MPEP §2173.05(b) regarding the term of degree “about”. In response to the Initial Official Action, which contained this same reasoning, Appellants argued that the cation polymer charge density range is beyond the charge range described by Smith, and that the term “about” should be narrowly interpreted to so as to provide for at most a 0.5% variance at both the upper and lower limits of the cation polymer charge density range. The PTO responded to Appellants’ argument on page 5 of the Final Official Action by asserting the following:

The claimed range of cationic polymer charge density range is flexible and the low end of range of “about 6 meq/gram” and is being construed on “4 meq/gram” of Smith, in view that there is nothing in the specification to provide any indication as to what range of specific density is covered by the term “about”. See MPEP 2173.05(b). [Emphasis added].

To support a 103(a) rejection, in other words a conclusion of obviousness, “either the references must expressly or impliedly suggest the claimed combination or the [PTO] must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). Appellants respectfully note that the PTO has not

asserted that the Smith reference either expressly or impliedly suggests Appellants' polycation charge range. In addition, Appellants note that the PTO does not provide any reasoning as to why one skilled in the art would have found the claimed range to be obvious in light of the Smith teaching. Moreover, Appellants assert that the PTO has confused the requirements of obviousness under 35 U.S.C. 103(a) with requirements of definiteness under 35 U.S.C. 112. Appellants respectfully contend that determining whether or not the specification provides some standard for measuring a term of degree, such as the term "about" is a 35 U.S.C. 112 issue. Thus, a rejection under 35 U.S.C. 103(a) is not proper in this case. Accordingly, Appellants respectfully request that the rejection of claims 1-3, 8-16 and 46 under Section 103(a) be withdrawn.

Appellants hereafter address MPEP 2173.05(b) and the PTO's reasons for maintaining the rejection of the claims, and in particular independent claim 1, from which all of the remaining claims depend. Appellants respectfully submit that Section 2173.05(b), which discusses the use of relative terminology, requires a two-step analysis in determining whether or not a relative term, such as "about" satisfies the definiteness requirement of Section 112. MPEP 2173.05(b) recites:

When a term of degree is presented in a claim, first a determination is to be made as to whether the specification provides some standard for measuring that degree. If it does not, a determination is made as to whether one of ordinary skill in the art, in view of the prior art and the status of the art, would be nevertheless reasonably apprised of the scope of the invention.

In the instant case, Appellants acknowledge that the specification does not present a description of a standard for measuring the term "about". However, Appellants contend that one of ordinary skill in the art would be reasonably apprised of the definite meaning of the term "about" in the context of the prior art.

MPEP 2173.05(b) cites In *Ex parte Eastwood*, 163 USPQ 316 (Bd. App. 1968), in which the Patent Office Board of Appeals held that in a claim reciting “between 25 to about 45%”

[t]he descriptive word “about” is not indefinite as argued by the examiner. Its meaning is not as broad and arbitrary as contended by the examiner. Rather, the term is clear but flexible and is deemed to be similar in meaning to terms such as ‘approximately’ or ‘nearly’.

163 USPQ 316 (Bd. App. 1968). Additionally, Section 2173.05(b) cites *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991), in which the Federal Circuit held that claims reciting “at least about” were invalid as they did not comply with the definiteness requirement of 35 U.S.C. 112. Specifically, the *Amgen* Court held that a claim reciting the limitation “at least about 160,000” was invalid for indefiniteness where there was: close prior art; nothing in the specification, prosecution history or the prior art to provide any indication as to what range of specific activity is covered by the term “about”; and where no expert testified as to the definite meaning for the term in the context of the prior art. 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991). However, the *Amgen* Court further advised that

[i]n arriving at this conclusion, we caution that our holding that the term “about” renders indefinite claims 4 and 6 should not be understood as ruling out any and all uses of this term in patent claims. It may be acceptable in appropriate fact situations, e.g., *W.L Gore & Assocs., Inc. v Garlock, Inc.*, 721 F.2d 1540, 1557, 220 USPQ 303, 316 (Fed. Cir. 1983) (“use of ‘stretching . . . at a rate exceeding about 10% per second’ in the claims is not indefinite”), even though it is not here.

927 F.2d at 1200. Appellants contend that the use of the term “about” is acceptable in the instant application as the instant fact situation is distinguishable from the fact situation in *Amgen*.

In the instant case, the Smith reference cited by the PTO teaches a cationic polymer charge density range having an upper end of “4 meq/gram”. In claim 1, Appellants recite a polycation charge range having a lower end of “about 6 meq/gram”. Appellants respectfully submit that one of ordinary skill would narrowly interpret the meaning of the term “about” in

light of the Smith reference. By way of illustration, the prior art reference in *Amgen* disclosed a specific activity of 128,620. As the disputed claims in *Amgen* recited a limitation of “at least about 160, 000”, there was a 19.6% difference in number. In contrast, in the instant application, the difference between 6 meq/gram and 4 meq/gram, i.e. 2 meq/gram, is significant as it is a 33% increase in overall charge. Appellants contend, taking into consideration the Smith reference, one of ordinary skill would not interpret the term “about” to cover a 33% difference in charge. As stated in the response to the Initial Office Action, Appellants submit that one of ordinary skill would interpret the term “about” to provide for at most a 0.5% variance at both the upper and lower ends of Appellant’s range, i.e. 5.5 meq/gram for “about 6 meq/gram” and 12.5 meq/gram for “about 12 meq/gram”, whereby when rounded to the significant figures set forth in original claim 1, 5.5 becomes 6 and 12.5 becomes 12. Further, in light of this large difference in charge, one of ordinary skill would understand that the mean value between the Smith value of 4 meq/gram and the mean specific activity level of 6 meq/gram constituting infringement, in other words what is covered by the term “about”, is not one which would be “construed on”, as suggested by the PTO, or be obvious in view of, the prior art.

In addition, the applicants in *Amgen* amended the claims to add the word “about” late in the prosecution of the application. This was found by the District Court, whose holding was upheld by the Federal Circuit, that the “addition of the word ‘about’ seems to constitute an effort to recapture . . . a mean activity somewhere between 120,000, which the patent examiner found was anticipated by the prior art, and 160,000.” 927 F.2d at 1218. In contrast, Appellants have not amended the claims in any manner which would be considered an attempt to recapture a value previously claimed and found to be anticipated by the prior art.

Further, the District Court’s holding was further supported by the fact that no expert testified as to the definite meaning for the term “about” in the context of the prior art. Here,

Appellants assert that one of ordinary skill in the art would be reasonably apprised of the meaning of the term "about" in the context of the prior art. As previously stated herein, the Appellants submit that the term "about" in the charge range limitation is definite and should be found to be beyond the range described by Smith.

CONCLUSION

Claims 1-17 and 44-46 are definite and are in compliance with 35 U.S.C. § 112, second paragraph. Additionally, claims 1-17 and 44-46 are not obvious in view of Smith under 35 U.S.C. § 103(a) and should not be "construed on" Smith as suggested by the PTO. Smith does not teach or suggest all of the limitations of independent claim 1, and the claim should be found allowable. Accordingly, all claims which depend from claim 1 should also be found allowable. Reversal of the rejections and allowance of the application is respectfully requested.

Respectfully submitted,

12/15/03
Date

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John M. Olivo
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EXPRESS MAIL

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December 15, 2003

Express Mail No. EL047113787US

April M. Fiedler

APPENDIX

Pending Claims

1. A polymer binder for a fibrous sheet comprising:
a polyanion having a negative charge of between about 4 to about 12 milliequivalents per gram; and
a polycation having a positive charge of between about 6 to about 12 milliequivalents per gram.
2. The binder of claim 1, wherein the polyanion has a plurality of negatively charged anionic groups and the polycation has a plurality of positively charged cationic groups, the molar ratio of total negatively charged anionic groups to total positively charged cationic groups being between about 10:1 and about 1.1:1.
3. The binder of claim 2, wherein the molar ratio of total negatively charged anionic groups to total positively charged cationic groups is about 3:1.
4. The binder of claim 1, wherein the molecular weight of the polyanion is between about 10,000 to about 900,000 grams per mole.
5. The binder of claim 1, wherein the polyanion is crosslinked.

6. The binder of claim 5, wherein the polyanion has a plurality of negatively charged anionic groups, the total negatively charged anionic groups having a cross-link ratio of up to about 1:50.

7. The binder of claim 1, wherein the molecular weight of the polycation is between about 10,000 to about 900,000 grams per mole.

8. The binder of claim 1, wherein the binder forms a interpolyelectrolyte complex.

9. The binder of claim 1, wherein the binder further comprises a spacer selected from the group consisting of a polysaccharide, a hydrogel, a latex and combinations thereof.

10. The binder of claim 1, wherein the binder further comprises a starch spacer.

11. The binder of claim 1, wherein the binder further comprises a surfactant.

12. The binder of claim 11, wherein the surfactant is selected from the group consisting of alkylamines, fatty amines and combinations thereof.

13. The binder of claim 1, wherein the polyanion to polycation charge ratio is about 1:1.

14. The binder of claim 1, wherein the polyanion is selected from the group consisting of polycarbohyrates, polyphosphates, polysulfonates, polysulfates and combinations thereof.

15. The binder of claim 1, wherein the polycation is a polyamine.
16. The binder of claim 15, wherein the polyamine is a quaternary amine.
17. The binder of claim 45, wherein the anionic acid groups are weakly acidic.
44. The binder of claim 1, wherein the polycation has a positive charge of between 6 to about 12 milliequivalents per gram.
45. The binder of claim 2, wherein the negatively charged anionic groups are acids.
46. The binder of claim 2, wherein the positively charged cationic groups are amines.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:)	
)	
Kehrer et al.)	Examiner: Halpern, Mark
)	
Serial No.: 09/933,408)	Art Unit: 1731
)	
Filed: August 20, 2001)	Confirmation No.: 5728
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For: FIBROUS SHEET BINDERS)	Docket No.: 0030
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APPEAL BRIEF

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light of the Smith reference. By way of illustration, the prior art reference in *Amgen* disclosed a specific activity of 128,620. As the disputed claims in *Amgen* recited a limitation of “at least about 160, 000”, there was a 19.6% difference in number. In contrast, in the instant application, the difference between 6 meq/gram and 4 meq/gram, i.e. 2 meq/gram, is significant as it is a 33% increase in overall charge. Appellants contend, taking into consideration the Smith reference, one of ordinary skill would not interpret the term “about” to cover a 33% difference in charge. As stated in the response to the Initial Office Action, Appellants submit that one of ordinary skill would interpret the term “about” to provide for at most a 0.5% variance at both the upper and lower ends of Appellant’s range, i.e. 5.5 meq/gram for “about 6 meq/gram” and 12.5 meq/gram for “about 12 meq/gram”, whereby when rounded to the significant figures set forth in original claim 1, 5.5 becomes 6 and 12.5 becomes 12. Further, in light of this large difference in charge, one of ordinary skill would understand that the mean value between the Smith value of 4 meq/gram and the mean specific activity level of 6 meq/gram constituting infringement, in other words what is covered by the term “about”, is not one which would be “construed on”, as suggested by the PTO, or be obvious in view of, the prior art.

In addition, the applicants in *Amgen* amended the claims to add the word “about” late in the prosecution of the application. This was found by the District Court, whose holding was upheld by the Federal Circuit, that the “addition of the word ‘about’ seems to constitute an effort to recapture . . . a mean activity somewhere between 120,000, which the patent examiner found was anticipated by the prior art, and 160,000.” 927 F.2d at 1218. In contrast, Appellants have not amended the claims in any manner which would be considered an attempt to recapture a value previously claimed and found to be anticipated by the prior art.

Further, the District Court’s holding was further supported by the fact that no expert testified as to the definite meaning for the term “about” in the context of the prior art. Here,

Appellants assert that one of ordinary skill in the art would be reasonably apprised of the meaning of the term "about" in the context of the prior art. As previously stated herein, the Appellants submit that the term "about" in the charge range limitation is definite and should be found to be beyond the range described by Smith.

CONCLUSION

Claims 1-17 and 44-46 are definite and are in compliance with 35 U.S.C. § 112, second paragraph. Additionally, claims 1-17 and 44-46 are not obvious in view of Smith under 35 U.S.C. § 103(a) and should not be "construed on" Smith as suggested by the PTO. Smith does not teach or suggest all of the limitations of independent claim 1, and the claim should be found allowable. Accordingly, all claims which depend from claim 1 should also be found allowable. Reversal of the rejections and allowance of the application is respectfully requested.

Respectfully submitted,

12/15/03
Date

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April M. Fiedler

APPENDIX

Pending Claims

1. A polymer binder for a fibrous sheet comprising:
a polyanion having a negative charge of between about 4 to about 12 milliequivalents per gram; and
a polycation having a positive charge of between about 6 to about 12 milliequivalents per gram.
2. The binder of claim 1, wherein the polyanion has a plurality of negatively charged anionic groups and the polycation has a plurality of positively charged cationic groups, the molar ratio of total negatively charged anionic groups to total positively charged cationic groups being between about 10:1 and about 1.1:1.
3. The binder of claim 2, wherein the molar ratio of total negatively charged anionic groups to total positively charged cationic groups is about 3:1.
4. The binder of claim 1, wherein the molecular weight of the polyanion is between about 10,000 to about 900,000 grams per mole.
5. The binder of claim 1, wherein the polyanion is crosslinked.

6. The binder of claim 5, wherein the polyanion has a plurality of negatively charged anionic groups, the total negatively charged anionic groups having a cross-link ratio of up to about 1:50.

7. The binder of claim 1, wherein the molecular weight of the polycation is between about 10,000 to about 900,000 grams per mole.

8. The binder of claim 1, wherein the binder forms a interpolyelectrolyte complex.

9. The binder of claim 1, wherein the binder further comprises a spacer selected from the group consisting of a polysaccharide, a hydrogel, a latex and combinations thereof.

10. The binder of claim 1, wherein the binder further comprises a starch spacer.

11. The binder of claim 1, wherein the binder further comprises a surfactant.

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14. The binder of claim 1, wherein the polyanion is selected from the group consisting of polycarbohydrates, polyphosphates, polysulfonates, polysulfates and combinations thereof.

15. The binder of claim 1, wherein the polycation is a polyamine.
16. The binder of claim 15, wherein the polyamine is a quaternary amine.
17. The binder of claim 45, wherein the anionic acid groups are weakly acidic.
44. The binder of claim 1, wherein the polycation has a positive charge of between 6 to about 12 milliequivalents per gram.
45. The binder of claim 2, wherein the negatively charged anionic groups are acids.
46. The binder of claim 2, wherein the positively charged cationic groups are amines.